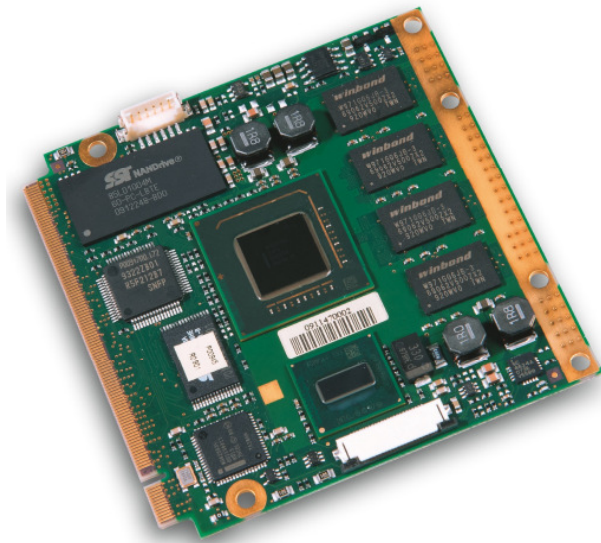


MSC Q7-US15W-FD

Intel® Atom™ Z5x0

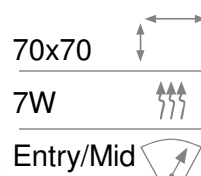


Description

The design of the MSC Q7-US15W-FD module is based on Intel's ATOM™ CPU technology and the US15W System Control Hub (SCH) offering lowest power consumption x86 technology and a high degree of functional integration for entry level embedded applications.

The Z5x0 processor with its low power consumption is ideally suited for fanless designs. Paired with the Intel® US15W SCH the design offers integrated graphics and many I/O options. Some module versions are available with 1.8/3.6/7.2GB on board IDE Flash Memory device. The Greenliant MLC NANDrive offer unique features like 10 Million host write cycles with advanced NAND management technology.

MSC Q7-US15W-FD optionally delivers hardware and BIOS based security to protect the customers IP. The implemented security scheme is compliant with the requirements of the TCG (Trusted Computing Group).



Highlights

- Intel® Atom™ Z5x0 (up to 1.6GHz)
- Mobile Intel® US15W System Controller Hub with integrated Intel® GMA 500
- Up to 2 GB DDR2 SDRAM, soldered
- Up to 8 GB on board Flash, bootable
- 10 / 100 / 1000 Base-TX Ethernet interface
- LVDS interface (18 / 24 Bit) up to 1366 x 768
- SDVO interface up to 1920 x 1200
- Dual Independent Display supported
- SATA-150 & SDIO interface
- Eight USB 2.0, one with client option
- High Definition Audio interface/s

Technical Data – MSC Q7-US15W-FD

Module Standard

Qseven™ Standard

Rev 1.2 compliant interface

Core Logic, Memory

CPU

Intel® Atom Z530 (1.6GHz), Z510 (1.1GHz)

Chipset

Intel® US15W SCH

Memory

512MB/1GB DDR2-533 SDRAM on board
OEM versions with 2GB SDRAM on request

Storage Interfaces

SATA

One SATA channel (up to 150MB/s)

Flash Disk

Flash disk 4GB optional, OEM versions with others sizes on request

Bus Interfaces

USB

8 x USB 2.0 host

PCI Express™

One channels PCI Express x1 on the Qseven connector
(one channel used for Gbit Ethernet)

LPC

Low Pin Count bus for legacy interfaces on Qseven connector

Display Interface

Graphics Controller

Intel® Graphics Media Accelerator 500,
(integrated in Intel® US15W SCH)

Video Memory

UMA, up to 384 MB

LCD Interface

LVDS 18/24 Bit, single channel, Resolution 1366 x 768
SDVO up to 1920 x 1200

Miscellaneous

Watchdog Timer

Initiates system reset, (programmable, 1s ... 255h)

Fan Supply

3-pin header (5V) for system fan, fan speed control

RTC

Part of US15W System Control Hub, battery extended

System Monitoring

Voltage, Temperature, Fan

Network Interface

Ethernet

10/100/1000Base-TX (Intel® WG82583V)

Audio Interface

High Definition Audio

Security Device

Infineon TPM 1.2 SLB 9635, optional

Firmware, Software

Boot Options

Quick Boot, MultiBoot XP (FD, HD, CD, LAN, USB), Boot without keyboard, LAN Boot via PXE (RPL optional), Wake on LAN (WOL) and boot from SDIO (Linux only) supported

Security (optional)

Phoenix StrongROM technology, TPM 1.2 support, Pre-Boot-Authentication, Phoenix SecureFlash for safe BIOS updates

Power Management

ACPI (S3 hot, S4, S5 supported), Enhanced Intel SpeedStep® technology supported, Active/passive cooling

USB

USB legacy support (Keyboard, Mouse, Hub)

Video

VGA BIOS with flat panel extensions (EPI)

Setup

CMOS configuration backup in EEPROM

HW Programming I/F

EAPI – Embedded Application Interface (PICMG specification)
UspEpc – MSC Universal board support package

Board Support Package (BSP)

Microsoft Windows XP (e), Linux

Power Supply

Power Supply Voltage

+5V +/-5%, 5V Stby optional

Power Consumption

7W typ. (Z530, 1.60GHz)

Environment

Ambient Temperature

0° ... 60° C (operating)
-25° ... 85° C (storage)

Humidity

5 ... 95% (operating, non-condensing)
5 ... 95% (storage, non-condensing)

Mechanical

Dimensions

70mm x 70mm x13mm

Order Reference – MSC Q7-US15W-FD

Order Number	Description	Reference
32456	Intel® Atom™ Z510, 512MB, 1GbE, no Flash, SATA, 1 x PCI Express x1	MSC Q7-US15W-FD-001
32457	Intel® Atom™ Z530, 1024MB, 1GbE, no Flash, SATA, 1x PCI Express x1	MSC Q7-US15W-FD-002
39400	Intel® Atom™ Z510, 1024MB, 1GbE, 3.6GB Flash, SATA, 1x PCI Express x1, TPM	MSC Q7-US15W-FD-013
39402	Intel® Atom™ Z530, 1024MB, 1GbE, 3.6GB Flash, SATA, 1x PCI Express x1, TPM	MSC Q7-US15W-FD-014
39378	Intel® Atom™ Z510, 1024MB, 1GbE, 1.8GB Flash, SATA, 1x PCI Express x1	MSC Q7-US15W-FD-015

Accessories

Order Number	Description	Reference
	Cooling	
1050905	Heat spreader	MSC Q7-US15W-HSP-001
1053769	Heat rail	MSC Q7-XXX-01 HTR-001
	Carrier Boards	
39028	Qseven embedded platform, 10-28V input voltage, RJ45 connector with LED for LAN, Dual SATA connector, SD card holder, 5 x USB (2 x external), mini PCI Express socket, battery, VGA output HD audio codec, RS232 D-Sub9, touch screen controller	MSC Q7-MB-EP3-001
39698	Power supply Unit with connector for Q7-MB-EPx baseboards	MSC Q7-MB-EP-PSU1
	SSD	
1086583	40GB Intel SSD; 2,5" MLC; KIT incl. frame & cable	SSDSA2CT040G3K5

Corporate Offices

MSC Vertriebs GmbH, Industriestraße 16, 76297 Stutensee, Tel. +49 7249 910 – 0, Fax +49 7249 7993 0
MSC Vertriebs GmbH, Design Center München-Neufahrn, Zeppelinstr. 1A, 85375 Neufahrn, Tel. +49 8165 906 – 100, E-mail: boards@msc-ge.com,
Technical Support COM: Tel. +49 8165 906 – 200, E-mail: support.boards@msc-ge.com, Internet: www.msc-ge.com/support-boards

Sales Offices Germany

München-Dornach · Tel. +49 89 945532 – 0 · **Berlin** · Tel. +49 30 720089 - 0 · **Hamburg** · Tel. +49 4106 7764 - 0 · **Hannover** · Tel. +49 511 616847 - 0 ·
Braunschweig · Tel. +49 5341 2999 - 0 · **Düsseldorf** · Tel. +49 211 92593 - 0 · **Aachen** · Tel. +49 2408 709 – 0 · **Koblenz** · Tel. +49 2630 96239 - 11 ·
Rodgau · Tel. +49 6106 26769 – 0 · **Wiesbaden** · Tel. +49 611 97320 - 0 · **Frankenthal** · Tel. +49 6233 344 - 0 · **Stuttgart** · Tel. +49 711 78336 - 0 ·
Freiburg · Tel. +49 761 8819 – 819 · **Nürnberg** · Tel. +49 911 43970 - 0 · **Jena** · Tel. +49 3641 6825 - 0 · **Stutensee** · Tel. +49 7249 910-173

Sales Offices Europe

MSC Vertriebs GmbH · Leobersdorf · Tel. +43 2236 205066 - 0 · **Velden** · Tel. +43 4274 23222 - 17 · **MSC Schweiz AG · Biel/Bienne** · Tel. +41 32 366 8565 ·
Montreux · Tel. +41 21 965 3500 · **Rotkreuz** · Tel. +41 41 785 8200 · **Volketswil** · Tel. +41 43 355 33 66 ·
MSC Iberia S.L. · Barcelona · Tel. +34 931 505 505 · **Madrid** · Tel. +34 91 72169 - 51 ·
MSC France · Paris · Tel. +33 1 45128230 · **Strasbourg** · Tel. +33 3 88 651843 · **Lyon** · Tel. +33 4 72 756020 ·
MSC Italia Srl · Tel. +39 039 63089-1 · **MSC Nederland BV** · Tel. +31 78 6920 - 150 · **MSC Belgium Office** · Tel. +32 2 452 6451 ·
MSC (UK) LTD. · Brighton · Tel. +44 1273 622446, **Weybridge** · Tel. +44 1932 268990 · **Milton Keynes** · Tel. +44 1908 263999 ·
MSC (Scotland) LTD. · Tel. +44 1506 460555 · **MSC Representative (DK) MK Nordic ApS** · Tel. +45 24 252745 ·
MSC-Vertriebs-CZ s.r.o. · Blansko · Tel. +420 516 411494 - 15, **Prague** · Tel. +420 251 261 130 ·
MSC-Vertriebs-SK s.r.o. · Zilina · Tel. +421 41 5001243 · **MSC Budapest Kft.** · Tel. +36 1250 90 - 40 ·
MSC Polska Sp. z o.o. · Tel. +48 323 3054 - 50 · **MSC-Mibatron s.r.l. · Bucharest** · Tel. +40 31 1023466 · Tel. +40 21 2302530 ·
MSC Vertriebs GmbH · Istanbul · Tel. +90 216 411 2333

